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ABSTRACT

Research was conducted to study environmental factors associated with the development of cognitive style in children. The hypothesis was that the parents of field-independent children grant them more autonomy and power than do parents of field-dependent children. The sample consisted of 38 white, middle-class kindergartners, 19 boys and 19 girls, and their parents. Half of each sex were highly FD; half were highly FI. Observations were made of family interaction in the natural setting of the home around dinnertime. Conversation and behavior were analyzed according to content variable, such as kinds of influence and assistance behaviors, and process variables, such as participation rates and interruption rates as indicators of control behavior. Formulas for the measure of participation, dominance, and interruption were used in analyzing conversation. Results led to the modification of the original hypothesis. On measures of social interaction involving active, assertive kinds of behavior, the FI boys participate more; other data indicate they initiate and terminate more social interaction than the other groups of children. The FI girls are less actively involved in this sort of social participation with their families. On measures of social interaction where sensitivity to the subtleties of the social field are necessary, the FD children, especially the girls, function more effectively. [Not available in hard copy due to marginal legibility of original document.] (KM)

Family Interaction and Cognitive Style: Power Around the Dinner Table

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Paper presented at Society for Research in Child Development meetings,

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I. Introduction

This paper deals with certain power variables in the family interaction of kindergarten boys and girls differentiated with respect to field dependence-field independence (FD-FI) cognitive styles. Field independent persons, as you are undoubtedly aware, appear to be more capable of articulating and analyzing an impersonal stimulus independently of its embedding context, whereas the perception and behavior of FD persons seems to be strongly influenced by the circumstances.

Speculation on the origin of this dimension has directed attention to both constitutional and environmental factors. Considered important among the environmental factors are early experiences encouraging autonomous and active approaches to the world-experiences providing the child with opportunities to choose among behavior alternatives. The few studies which have been done in this area have been either retrospective and/or have used questionnaires and interviews and/or have omitted the role of the father.

The purpose of the present study is to study environmental factors associated with the development of cognitive style in children. In particular, we will report autonomous behavior observed in the natural setting of the home in a sample of FD-FI children. Our original hypothesis was that the parents of FI children grant them more autonomy and power than do parents of FD children, i.e. they will less frequently intervene, interrupt, or interfere with child- initiated activity.

II. Methods

The sample consisted of 38 white, middle class kindergarten children, 19 boys and 19 girls, and their mothers and fathers. The children represented

extreme cognitive style groups selected from a sample of 300; half of the boys and half of the girls were high on FD, the other half were highly FI. The CEFT and the PREFT were used for selection of the extreme groups and the WISC was used to control for intelligence which was average for both cognitive style groups.

Family interaction in these 38 families was observed in two settings (1) the natural setting of their home around dinnertime and (2) 6 laboratory tasks designed to elicit autonomy and power behaviors. We will just report on the home observations here.

The family's dinner observation began just before the evening meal, and it continued until just after the meal. The female observer took a non-participant role in recording this interaction. A two channel tape recorder obtained the family's verbatim conversation on one track and the observer's dictated comments on the other. This was done using a Stenomark Dictation Silencer which is a specially designed microphone insulating the observer's voice and prevents it from being heard in the room. The tapes were then transcribed with the verbatim family conversation on one side of a typed page and the observer's comments and descriptions of nonverbal behavior, for example, on the other.

The category system being used to analyze the transcriptions has two factors: (a) Content or substantive variables, such as kinds of influence and assistance behaviors as well as (b) Process variables such as participation rates and interruption rates as indicators of control behavior. It is these particular Process variables with which we are concerned here.

The families varied, of course, in the length of time taken for dinner although there was no significant difference between families of FD-FI children. Because of these differences in observation length the number of words spoken or utterances made would vary. Our derived measures, therefore, are in the form of indices or percentages that control for the differences in volume.

III. Results

A. Participation measures

Two indicators of autonomous behavior were derived from word counts of each family member. The first is:

(a) Participation Index= Family role member's Total Words/ Total Family Words

The average percent agreement for coding word counts was 98%. The ANOVA data for this Participation Index indicate that there are significant interactions between family role, sex, and cognitive style of the child. Taking the FI dimension, for example, we find that the mothers of FI boys share the family conversation equally with their spouses while the mothers of FI girls do speak significantly more during dinner than spouses and their children. The reverse pattern holds for FD where the mothers of FD boys speak significantly more than their spouses and children but the mothers of FD girls share the conversation The FI boys participate more than FD boys; and also in accord with our hypothesis the FI boys participate as much as their fathers.

Insert Table 1 here

The data from a second indicator of autonomy corroborate this finding that the FI boys are more autonomous with regard to participating in the family dinner conversation.

The second derived measure is:

(b) Dominance Index = Family role member A Total Words/ Family role member B Total Words

In this index, the closer the ratio is to 1, the greater the degree of equality in verbal output by each of the family members. The further the ratio is from one, the more the family member in the numerator talks relative to the family member in the denominator. In this index we have placed the parent total words in the numerator and the child total words in the denominator. The ANOVA of these data indicates that the FI boys talk significantly more, relative to their mothers and fathers, than do other groups of subject children. As we said, this supports our original hypothesis.

Insert Table 2 here

B. Direct Person Control Measures

We also used certain measures of direct person control in the form of interruptions. Among them were:

(a) Interruption Index = Successful interruptions of Family Member / Successful interruptions + Unsuccessful interruptions of Family Member
(Success of Interruptions) 1

Successful interruptions were utterances that broke into the target person's speech and where that person abruptly stopped talking before the idea was completed. Unsuccessful interruptions were intrusions into another person's statement but where that person continued to speak simultaneously with the intruding speech. In this derived measure, the closer the index approaches zero, the less successful are the interruption attempts. The average percent agreement for coding Successful Interruptions was 98% and for Unsuccessful Interruptions was 96%.

A second interruption measure used was:

(b) Interruption Index = Successful interruption of Family Member / Successful interruptions of Total Family
(Family Interruption Status) 2

This index represents the proportion of the Total Family Successful Interruptions to which each family member contributes. Table 3 indicates that the parents are more successful at interrupting than their subject children. They are, in other words, more in control of the dinner situation than are their children. More interestingly, from our perspective, is that the FI boys and girls, relative to their own parents, are <u>less</u> successful at interrupting the flow of another person's speech than are the FD boys and girls. These findings are again supported by the analysis in Table 4 which indicate that the parents account for greater proportions of the successful interruptions in the total family interruptions. But more importantly, the FI children account for significantly less of the family's successful interruptions than do the FD children. In other words, the contribution of the FD children to the family successful interruption total is as great as their parents; the contribution of the FI children to the family successful

interruption total is significantly less than their parents.

Insert Tables 3+4 here

These interruption data do not support our original hypotheses. They are consonant, however, with several studies indicating that FD children are more sensitive to social situations. These sensitivities may be functional in the ebb and flow of dinner conversation when one wants to intervene to say something or make a point.

IV. Discussion

The data presented here and other data from our study have moved us to modify our original hypotheses. There would seem to be a more complex interaction between cognitive style, sex, and the nature of the situation in which the child's behavior is being appraised. On measures of social interaction involving more active, assertive kinds of behavior, the FI boys participate more; other data indicate they initiate and terminate more social interaction than the other groups of children; the FI girls are less actively involved in this sort of social participation with their families. On measures of social interaction where sensitivity to the subtleties of the social field are necessary, the FD children, especially the girls, function more effectively than the FI children

Our study is cross sectional and so we do not know the early socialization experiences of these children. The Goldberg and Lewis study of sex differences in the play behavior of year old infants is of interest to us in that their 13 month old girls spent more time touching, vocalizing, in proximity to and looking at their mothers than did the 13 month old boys. This suggests that conceivably the FI girls in our sample were exposed to differential patterns for exploratory behaviors, especially of the nonpersonal world, than the other subject groups. We cannot ferret this out from our current study but are interested in doing this in the future.

A final word on recent concerns for the educational implications of cognitive style differences. Work by Nakamura, by Keogh, for example, has suggested that

FD may be a more effective functional cognitive mode in those situations requiring social sensitivity, as, for example, in situations in which the information necessary to solve problems is not directly embedded in the task itself. Ruble and Nakamura find that FD Ss were more effective in solving tasks involving relevant social cues. We would like to urge the investigation of effective training methods for socially oriented vs. task oriented children; the investigation of differentiated curricula for children with alternative cognitive modes. We are ourselves planning to follow our original sample of 300 children to assess the relation of cognitive style to their educational experiences.

References

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Footnote 1

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Table 1

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Home Participation Index$_1$ Scores
Indicated by Sex and Cognitive Style

Family Role	Mean Home Participation Index$_1$			
	Field Dependent		Field Independent	
	Boys	Girls	Boys	Girls
Fathers	29.00	31.33	25.20	29.40
Mothers	37.78	35.78	31.30	39.80
Subject Child	15.67	16.67	21.50	13.50

*Participation Index$_1$ = Family Role Member's Total Words/
Total Family Words

Table 2

*

Home Dominance Index$_1$ Scores
Indicated by Sex and Cognitive Style

Family Role	Mean Home Dominance Index$_1$			
	Field Dependent		Field Independent	
	Boys	Girls	Boys	Girls
Fathers	2.66	2.17	1.29	2.58
Mothers	3.35	2.40	1.74	3.55

*Dominance Index$_1$ = Family Role Member A Total Words/
Family Role Member B Total Words

Table 3

*
Home Interruption Index$_1$ Scores
Indicated by Sex and Cognitive Style

Family Role	Mean Home Interruption Index$_1$			
	Field Dependent		Field Independent	
	Boys	Girls	Boys	Girls
Fathers	.22	.18	.23	.24
Mothers	.17	.15	.22	.22
Subject Child	.15	.18	.08	.09

*Interruption Index$_1$ = Successful Interruptions of Family Member/ Successful Interruptions + Unsuccessful Interruptions of Family Member

Table 4

Home Interruption Index$_2$ Scores
Indicated by Sex and Cognitive Style

Family Role	Mean Home Interruption Index$_2$			
	Field Dependent		Field Independent	
	Boys	Girls	Boys	Girls
Fathers	.30	.22	.30	.31
Mothers	.31	.28	.30	.39
Subject Child	.17	.25	.13	.09

* Interruption Index$_2$ = Successful Interruptions of Family Member / Successful Interruptions of Total Family